CALIFORNIA STATE SCIENCE FAIR
2016 PROJECT SUMMARY

Name(s)

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Project Number

36236

Project Title

Does the Shoulder Angle of a Horse Affect Its Stride?

Abstract

Objectives/Goals

To test if the shoulder angle of a horse affects its stride. It was expected that the larger the shoulder angle, the longer the stride. Similar to humans with longer legs typically having a longer stride, it was anticipated that a larger shoulder angle would result in a longer stride in a horse.

Methods/Materials

Using an electronic protractor the shoulder angle was measured for 5 different horses. Each horse was a different breed. Each horse was walked through a clean patch of dirt at a normal walking gait. The distance between each step front to front hoof was measured using a measuring tape.

Results

A larger shoulder angle did result in a larger stride with one exception. One of the horses tested was a miniature horse section B, and this horse is significantly smaller than the other four breeds. This horse had one of the largest shoulder angles but a much smaller stride than the other horses.

Conclusions/Discussion

A larger shoulder angle on a horse did not always correlate to a longer stride. Certain unique physical characteristics of some breeds impact the stride more than the shoulder angle. However, in horses with similar characteristics the shoulder angle did correlate to the stride. Additional testing grouping horses by breed and then testing if the shoulder angle affects the stride could provide more conclusive data.

Summary Statement

My testing showed that the shoulder angle of a horse does affect its stride but I discovered that the unique physical characteristics of certain breeds prevent comparing the data across breeds.

Help Received